

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Railway applications – Fixed installations – Particular requirements for a.c. switchgear –

Part 1: Single-phase circuit-breakers with U_n above 1 kV

Applications ferroviaires – Installations fixes – Exigences particulières pour appareillage à courant alternatif –

Partie 1: Disjoncteurs monophasés avec U_n supérieur à 1 kV



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

RAILWAY APPLICATIONS – FIXED INSTALLATIONS – PARTICULAR REQUIREMENTS FOR AC SWITCHGEAR –

Part 1: Single-phase circuit-breakers with U_n above 1 kV

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International Standard IEC 62505-1 has been prepared IEC technical committee 9: Electrical equipment and systems for railways. This standard is based on EN 50152-1.

The text of this standard is based on the following documents:

FDIS	Report on voting
9/1219/FDIS	9/1232/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of IEC 62505 series, under the general title *Railway applications – Fixed installations – Particular requirements for a.c. switchgear*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

The IEC Standard series 62505 is divided as follows.

- Part 1: Single-phase circuit-breakers with U_n above 1 kV.
- Part 2: Single-phase disconnectors, earthing switches and switches with U_n above 1 kV.
- Part 3-1: Measurement, control and protection devices for specific use in a.c. traction systems – Application guide
- Part 3-2: Measurement, control and protection devices for specific use in a.c. traction systems – Single-phase current transformers
- Part 3-3: Measurement, control and protection devices for specific use in a.c. traction systems – Single-phase inductive voltage transformers

IEC 62505-1 is to be used in conjunction with IEC 62271-100 (2008).

The essential requirements of IEC 62271-100 have been transcribed in this International Standard. Other complementary clauses of IEC 62271-100 are mentioned in this Standard. Where a particular clause of IEC 62271-100 is not mentioned, but is not referred as "not applicable" in this Standard, that clause applies as far as reasonable. Where this Standard states "addition" or "replacement", the relevant text of IEC 62271-100 is to be adapted accordingly.

The numbering of clauses in the IEC 62271 series is not used in this Standard. The numbering in square brackets refers to the numbering of clauses in IEC 62271.

NOTE 1 Where terms defined in IEC 62271-100 conflict with definitions of the same terms as given in IEC 60050-811:1991 or of the other railway applications documents listed in the normative references, the definitions used in IEC 62271-100 are to be used.

NOTE 2 The suffix N which appears in this Standard for rated values is not present in IEC 62271-100.

RAILWAY APPLICATIONS – FIXED INSTALLATIONS – PARTICULAR REQUIREMENTS FOR AC SWITCHGEAR –

Part 1: Single-phase circuit-breakers with U_n above 1 kV

1 Scope

This part of IEC 62505 is applicable to single-phase a.c. one-pole circuit-breakers designed for indoor or outdoor fixed installations for operation at frequencies of 16,7 Hz, 50 Hz and 60 Hz on traction systems having an U_{Nm} above 1 kV up to 52 kV.

This International Standard is also applicable to two-pole circuit-breakers when connected in the following manner: one pole supplying the connection to the contact line of the track, the second pole supplying the connection to the feeder cable which runs alongside the same track and which is used to boost the track voltage at regular intervals in combination with autotransformers. The centre of this circuit is connected to earth.

This Standard is also applicable to the operating devices of circuit-breakers and to their auxiliary equipment.

This Standard does not address circuit-breakers with dependent manual operating mechanism.

NOTE A rated short-circuit making current cannot be specified for these circuit-breakers and the use of these mechanisms may give reasons for the objection based on their safety in operation.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60044-1:1999, *Instrument transformers – Part 1: Current transformers*

IEC 60850:2007, *Railway applications – Supply voltages of traction systems*

IEC 62271-1:2007, *High-voltage switchgear and controlgear – Part 1: Common specifications*

IEC 62271-100:2008, *High-voltage switchgear and controlgear – Part 100: Alternating-current circuit-breakers*

IEC 62271-102:2003, *High-voltage switchgear and controlgear – Part 102: Alternating-current disconnectors and earthing switches*

IEC 62497-1, *Railway applications – Insulation co-ordination – Part 1: Basic requirements – Clearances and creepage distances for all electrical and electronic equipment*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62271-1 and IEC 62271-100, and the following apply: